

# How important are spillovers from major emerging markets?

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  2. Among the E7 countries, spillovers from China are the largest
- ▶ Key challenge: channels of spillovers and heterogeneity?

# Summary: Empirical Approach

- ▶ Bayesian VAR
- ▶ Two setups
  1. Aggregate model
    - ▶ treats G7 and E7 as two separate blocks and assesses spillover on growth of other emerging and frontier markets as a block
    - ▶ recursive identification: G7 growth, US interest rate, EMBI, EM7 growth, oil price, EFM growth
  2. Country model
    - ▶ treats G7 and E7 as two separate blocks and assesses spillover on other emerging and frontier markets, one country at a time
    - ▶ recursive identification: G7 growth, EMBI, EM7 growth, trade weighted commodity prices, EFM growth and EFM real effective exchange rate
- ▶ Quarterly observations from 30 countries between 2000 to 2015.

## Comments

- ▶ Prefer the country model: treating the diverse set of EFM countries as an aggregate and having no specific commodity price or exchange rate seems to restrict our understanding of the spillover channels
- ▶ Endogeneity of oil price: probably doing a formal Granger causality test like Chen, Rogoff and Rossi (2009). Chatterjee and Saraf (2017) do this test for and find China's economic growth Granger causes oil price justifying the ordering here. Also, Hicks Killian (2013).
- ▶ But as noted in the paper, still little problematic since here E7 constitutes of a diverse range of countries

# Comments

- ▶ In particular, this diverse E7 countries include both oil importers (China, India) and exporters (notably Russia)
- ▶ If part of the spillover on EFM growth is via effect on oil price (or more generally commodity prices), it might be important to distinguish between demand and supply shock in commodity prices (Killian 2009)
- ▶ Perhaps do GC test for each E7 individually and hope no country other than China causes oil price
- ▶ What would we lose if instead of E7 comparing to G7, we compare China and US? (Gauvin and Rebillard (2015))

## Comments

- ▶ In the country model: closer to treating each country as a SOE and assessing impact of foreign shocks. Reason for excluding price and monetary policy instrument of these countries? (Kim 2001, 2003; Canova 2005; Kim and Roubini 2000; Mackowiak 2006, 2007)
- ▶ US interest in the aggregate model includes the ZLB period. Unless specifically assessing monetary policy spillover, perhaps EMBI and a similar bond market index for advanced economies?
- ▶ Data transformation, particularly detrending, makes it difficult to interpret magnitude of impact



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- ▶ Bayesian panel VARs (Canova and Ciccarelli (2009)) could be more appropriate to assess common and country-specific spillovers in the same framework instead of two separate models
- ▶ Consider for country  $i$ ,

$$z_{i,t} = \sum_{p=1}^P B_{i,p} z_{i,t-1} + \sum_{q=1}^Q D_{i,q} \epsilon_{t-q} + \sum_{j=1}^2 C_{i,j} X_{j,t} + u_{i,t} \quad (1)$$

with

$$u_{i,t} \sim N(0, \Sigma_i), v_{B_{i,p}} \sim N(0, \Omega_{B_{i,p}}), v_{D_{i,k}} \sim N(0, \Omega_{D_{i,k}})$$

$$B_{i,p} = \bar{B}_p + v_{B_{i,p}},$$

$$D_{i,k} = \bar{D}_k + v_{D_{i,k}}$$

$$\bar{A} = [\bar{B}_p, \bar{D}_k]$$

## An alternate framework

- ▶ Partial pooling of cross-sectional information allowing for unobserved common shocks (leading to a non-diagonal covariance matrix)
- ▶ Can estimate both common and individual IRFs in the same framework for a given common shock (US/ China/ G7/ E7)
- ▶ Flexibly allow for both group and country specific heterogeneity
- ▶ Possibly can relate the individual IRFs to country characteristics to understand more on different channels of spillovers

# Summary of comments

- ▶ Perhaps focusing on the country model
- ▶ Enriching the country model with price and domestic interest rate
- ▶ US and China?
- ▶ Future work: panel VAR?